

Abstract of the Disclosure

A switching amplifier drives balanced piezoelectric or other capacitive or reactive loads with a minimum physical electronics volume, enabling a compact arrangement that can combine amplifier and transducer at the same physical location. Power supply current is minimized by using two or more transducers driven with phase-shifted signals, resulting in stored energy being cycled between the transducers rather than being carried over the power supply lines for storage in a power supply. Auxiliary power supply capacitors to store energy coming out of the load can thus be minimized. The modulation scheme puts the switching frequencies in common-mode while the baseband signals are differential mode. The common-mode switching frequency signals are blocked from the loads by a common-mode inductor. The common-mode inductor can be physically small as a result of the large baseband load currents being in differential mode. Low-volume load filters are made possible by the fact that they are not called upon to filter signals at the fundamental switching frequency but only at higher frequencies. The loads are biased independently of the baseband signals. The switching amplifier can drive balanced loads comprising two, three or more individual load elements.